

(48)

$$\sin s = \frac{2}{3}$$

Quad II

$$\sin t = -\frac{1}{3}$$

Quad IV



$$\cos(s+t) = \cos s \cos t - \sin s \sin t$$

$$\downarrow \quad \downarrow \quad \downarrow \quad \downarrow$$

$$-\frac{\sqrt{5}}{3} \cdot \frac{2\sqrt{2}}{3} - \frac{2}{3} \cdot -\frac{1}{3}$$

$$\frac{-2\sqrt{10} + 2}{9}$$

$$\textcircled{11} \cos 40 \cos 50 - \sin 40 \sin 50 = \cos(40+50)$$

$$= \cos(90^\circ)$$

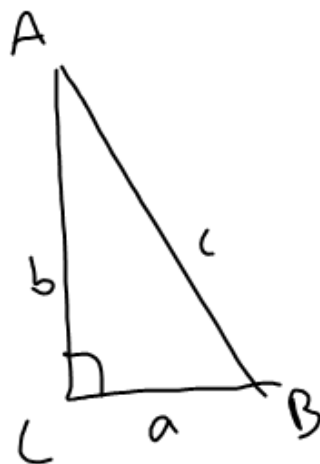
$$\textcircled{= 0}$$

$$\textcircled{34} \sin \theta = \cos(2\theta - 10)$$

$$\theta + (2\theta - 10) = 90$$

$$\frac{3\theta}{3} = \frac{100}{3}$$

$$\textcircled{\theta = \frac{100}{3}}$$



$$\sin A = \frac{a}{c}$$

$$\cos B = \frac{a}{c}$$

$$\textcircled{A + B = 90}$$

$$\cos 2x = \cos^2 x - \sin^2 x$$

↓

$$\cos(x+x) = \cos x \cos x - \sin x \sin x$$

$$\cos^2 x - \sin^2 x$$

5.3 # 8, 10, 12, 21, 50, 53-58, 63

$$\frac{\pi}{2} = \frac{6}{12}$$

$$\frac{\pi}{3} = \frac{4}{12}$$

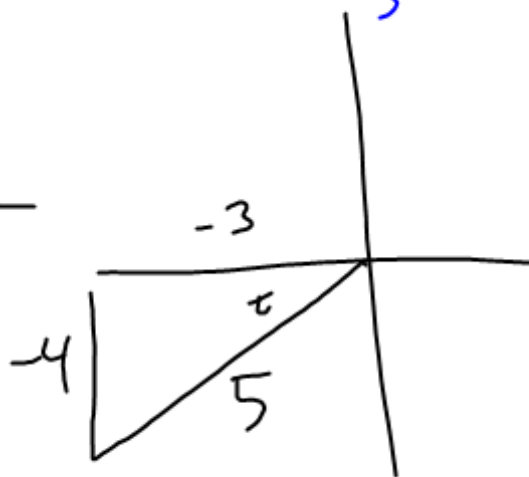
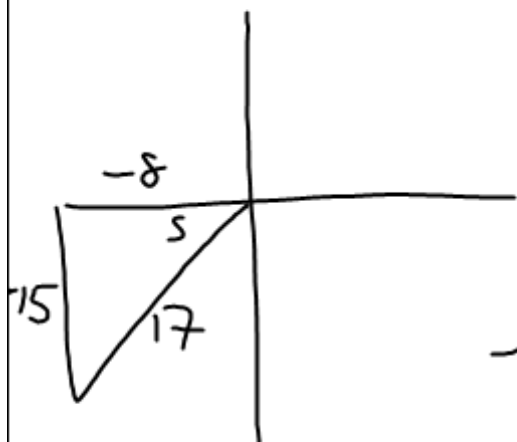
$$\frac{\pi}{4} = \frac{3}{12}$$

$$\frac{\pi}{6} = \frac{2}{12}$$

(50) $\cos(s) = -\frac{8}{17}$ $\cos t = -\frac{3}{5}$

$$\cos(s+t) = \cos s \cos t - \sin s \sin t$$

$$-\frac{8}{17} \cdot -\frac{3}{5} - \frac{-15}{17} \cdot -\frac{4}{5} = \frac{24}{85} - \frac{60}{85}$$



$$-\frac{36}{85}$$

$$\frac{24+60}{85} = \frac{84}{85}$$

(63)

$$\cos\left(\frac{\pi}{2} + x\right) = \cos\frac{\pi}{2} \cos x - \sin\frac{\pi}{2} \sin x$$

$$\downarrow$$

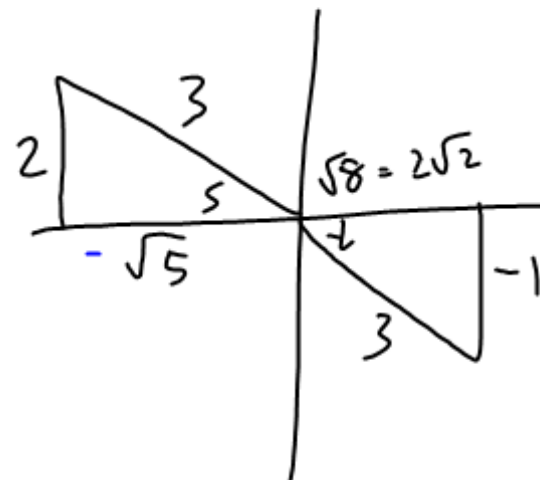
$$0 = \cos x - 1 \cdot \sin x$$

$$0 - \sin x = \boxed{-\sin x}$$

(48) $\sin s = \frac{2}{3}$ $\sin t = -\frac{1}{3}$

Quad II

Quad IV



$$\cos(s+t) = \cos s \cos t - \sin s \sin t$$

$$\begin{array}{c} \downarrow \quad \downarrow \\ -\frac{\sqrt{5}}{3} \cdot \frac{2\sqrt{2}}{3} - \frac{2}{3} \cdot -\frac{1}{3} \end{array}$$

$$-\frac{2\sqrt{10}}{9} + \frac{2}{9} = \frac{2 - 2\sqrt{10}}{9}$$

$$\textcircled{17} \quad \cos \frac{\pi}{2} = \sin \left(\frac{5\pi}{12} \right) \\ = \sin \left(\frac{\pi}{2} - \frac{\pi}{12} \right)$$

$$90^\circ = \frac{\pi}{2}$$

$\textcircled{33}$

$$\tan \theta = \cot(45 + 2\theta)$$

$$\theta + 45 + 2\theta = 90$$

$$\frac{3\theta}{3} = \frac{45}{3}$$

$$\theta = 15$$

Sect. 5.3 #8, 10, 12, 18, 21, 36, 50, 52-58, 63